

## Patent Abstracts of Japan

PUBLICATION NUMBER : 11100980  
PUBLICATION DATE : 13-04-99

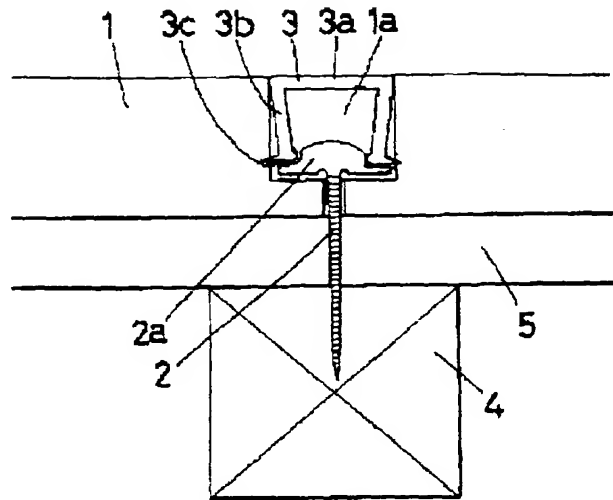
APPLICATION DATE : 29-09-97  
APPLICATION NUMBER : 09263440

APPLICANT : MATSUSHITA ELECTRIC WORKS LTD;

INVENTOR : TANOOKA HIKOKI;

INT.CL. : E04F 15/04 E04B 5/02

TITLE : FIXING STRUCTURE OF FLOOR  
PANEL



**ABSTRACT :** PROBLEM TO BE SOLVED: To provide a fixing structure of floor panels in which cap bodies do not easily slip off or drop out and which can be executed without an adhesive and whose maintenance work such as replacement of the floor panels can be easily performed.

**SOLUTION:** A small hole 1a is bored on the surface of a floor panel 1 and a screw 2 is driven from the small hole 1a to fix a floor panel 1 to a floor substrate. The extending-down parts 3b are formed at the external peripheral edges of a front face plate 3a to form a cap body 3. The cap body 3 is fitted in the small hole 1a. Wedge pieces 3c projecting outward are formed at the lower ends of the extending-down parts 3b of the cap body 3 and the lower ends of the extending-down parts 3b is pushed between the screw head 2a and the side walls of the small hole 1a to force the wedge pieces 3c to ingrow in the side walls of the small hole 1a.

COPYRIGHT: (C)1999,JPO



## © PAJ / JPO

- PN - JP11100980 A 19990413
- TI - FIXING STRUCTURE OF FLOOR PANEL
- AB - PROBLEM TO BE SOLVED: To provide a fixing structure of floor panels in which cap bodies do not easily slip off or drop out and which can be executed without an adhesive and whose maintenance work such as replacement of the floor panels can be easily performed.
- SOLUTION: A small hole 1a is bored on the surface of a floor panel 1 and a screw 2 is driven from the small hole 1a to fix a floor panel 1 to a floor substrate. The extending-down parts 3b are formed at the external peripheral edges of a front face plate 3a to form a cap body 3. The cap body 3 is fitted in the small hole 1a. Wedge pieces 3c projecting outward are formed at the lower ends of the extending-down parts 3b of the cap body 3 and the lower ends of the extending-down parts 3b is pushed between the screw head 2a and the side walls of the small hole 1a to force the wedge pieces 3c to ingrow in the side walls of the small hole 1a.
- I - E04F15/04 ;E04B5/02
- PA - MATSUSHITA ELECTRIC WORKS LTD
- IN - TANOOKA HIKOKI
- ABD - 19990730
- ABV - 199909
- AP - JP19970263440 19970929



(19) 日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11) 特許出願公開番号

特開平11-100980

(43) 公開日 平成11年(1999) 4月13日

(51) Int.Cl.<sup>5</sup>

識別記号

F I

E 0 4 F 15/04

E 0 4 F 15/04

G

E 0 4 B 5/02

E 0 4 B 5/02

F

審査請求 未請求 請求項の数 5 O L (全 5 頁)

(21) 出願番号

特願平9-263440

(22) 出願日

平成 9 年 (1997) 9 月 29 日

(71) 出願人 000005832

松下電工株式会社

大阪府門真市大字門真1048番地

(72) 発明者 田野岡 彦己

大阪府門真市大字門真1048番地松下電工株式会社内

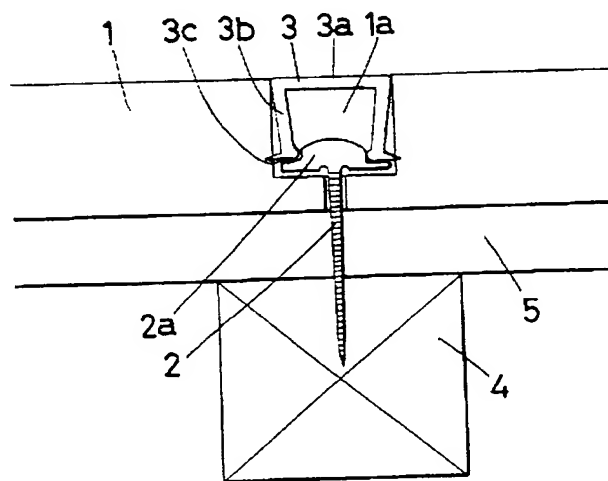
(74) 代理人 弁理士 佐藤 成示 (外 1 名)

(54) 【発明の名称】 床パネル固定構造

(57) 【要約】

【課題】 キャップ体の抜けや落ち込みなどの不具合が発生しにくく、また、接着剤が不要であって、施工容易であり、床パネルの取り替えなどのメンテナンスも行いやすい床パネル固定構造の提供。

【解決手段】 床パネル1表面に小穴1aを穿設し、この小穴1aからビス2を打ち込んで前記床パネル1を床下地に貼着固定し、表面板3aの外周縁に垂下片3bを設けてキャップ体3を形成し、このキャップ体3を前記小穴1aに嵌め込んで成る床パネルの固定構造において、キャップ体3の垂下片3b下端部に外方に突出するくさび片3cを形成し、この垂下片3b下端部をビス頭2aと小穴1a側壁との間に押し込むとともに、くさび片3cを小穴1a側壁に食い込ませている。



## 【特許請求の範囲】

【請求項1】 床パネル表面に小穴を穿設し、この小穴からビスを打ち込んで前記床パネルを床下地に貼着固定し、表面板の外周縁に垂下片を設けてキャップ体を形成し、このキャップ体を前記小穴に嵌め込んで成る床パネルの固定構造において、キャップ体の垂下片下端部に外方に突出するくさび片を形成し、この垂下片下端部をビス頭と小穴側壁との間に嵌め込むとともに、くさび片を小穴側壁に食い込ませて成ることを特徴とする床パネル固定構造。

【請求項2】 ビス頭を上方凸のR形状に形成して成ることを特徴とする請求項1記載の床パネル固定構造。

【請求項3】 ビス頭外周縁に段部を形成し、この段部内にキャップ体の垂下片下端部を納めて成ることを特徴とする請求項1または2のいずれかに記載の床パネル固定構造。

【請求項4】 キャップ体における垂下片下端部の下面を、下方に凸のR形状に形成して成ることを特徴とする請求項2記載の床パネル固定構造。

【請求項5】 ビス頭外周縁に段部を形成し、キャップ体における垂下片下端部の下面を、下方に凸のR形状に形成し、前記段部内にキャップ体の垂下片下端部を納めて成ることを特徴とする請求項2または4のいずれかに記載の床パネル固定構造。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は床パネル固定構造に関し、より詳しくは、床パネル表面に穿設された小穴からビスを打ち込んで、この床パネルを固定するとともに、キャップ体を前記小穴に嵌め込むことによって、ビス頭を隠して形成される床パネル固定構造に関する。

## 【0002】

【従来の技術】従来、図5に示すような床パネル固定構造が用いられている。この床パネル固定構造では、床パネル1表面に小穴1aを穿設し、この小穴1aからビス2を打ち込んで床パネル1を床下地に貼着固定している。また、表面板3aの外周縁に垂下片3bを設けて形成されるキャップ体3を、小穴1aに嵌め込んでビス頭2aを隠し、固定された床パネル1表面を仕上げている。

【0003】また、この場合、ビス2を打ち込んだ後に接着剤10を小穴1a内に入れて、キャップ体3における垂下片3bを小穴1a内に接着固定し、キャップ体3の落ち込みや抜けを防止している。

## 【0004】

【発明が解決しようとする課題】しかしながら、上記の従来例にあっては、接着剤10を小穴1a内に入れる作業に時間がかかって面倒であり、また、床パネル1を取り替える必要が生じたときには、ビス頭2aに接着剤10が付着しているので、ビス2をはずしにくいと言う問題があった。

【0005】本発明は、以上のような問題点を解決するためになされたものであり、その目的は、キャップ体の抜けや落ち込みなどの不具合が発生しにくく、また、接着剤が不要であって、施工容易であり、床パネルの取り替えなどのメンテナンスも行いやすい床パネル固定構造の提供にある。

## 【0006】

【課題を解決するための手段】上記課題を解決する請求項1記載の発明は、床パネル1表面に小穴1aを穿設し、この小穴1aからビス2を打ち込んで前記床パネル1を床下地に貼着固定し、表面板3aの外周縁に垂下片3bを設けてキャップ体3を形成し、このキャップ体3を前記小穴1aに嵌め込んで成る床パネルの固定構造において、キャップ体3の垂下片3b下端部に外方に突出するくさび片3cを形成し、この垂下片3b下端部をビス頭2aと小穴1a側壁との間に押し込むとともに、くさび片3cを小穴1a側壁に食い込ませて成ることを特徴として構成している。

【0007】このような床パネル固定構造では、キャップ体3を小穴1aに嵌め込むことによって、キャップ体3における垂下片3b下端部が、ビス頭2aと小穴1a側壁との間に押し込まれて、くさび片3cが小穴1a側壁に食い込んでいる。したがって、キャップ体3が小穴1a内にしっかりと固定されている。

【0008】請求項2記載の発明は、請求項1記載の発明において、ビス頭2aを上方凸のR形状に形成して成ることを特徴として構成している。

【0009】このような床パネル固定構造では、ビス頭2aのR形状に沿って、キャップ体3の垂下片3b下端部がスムーズに移動し、ビス頭2aと小穴1a側壁との間に押し込まれる。

【0010】請求項3記載の発明は、請求項1または2のいずれかに記載の発明において、ビス頭2a外周縁に段部2bを形成し、この段部2b内にキャップ体3の垂下片3b下端部を納めて成ることを特徴として構成している。

【0011】このような床パネル固定構造では、段部2bにキャップ体3の垂下片3b下端部が位置決めされるので、キャップ体3の嵌め込み深さが一定になり、床パネル1表面を平面に仕上げやすくなっている。

【0012】請求項4記載の発明は、請求項2記載の発明において、キャップ体3における垂下片3b下端部の下面を、下方に凸のR形状に形成して成ることを特徴として構成している。

【0013】このような床パネル固定構造では、垂下片3b下端部に引っ掛かりがなく、ビス頭2aのR形状に沿って移動しやすくなっている。

【0014】請求項5記載の発明は、請求項2または4記載のいずれかの記載の発明において、ビス頭2a外周縁に段部2bを形成し、キャップ体3における垂下片3b下端部の下面を、下方に凸のR形状に形成し、前記段部2b内にキャップ体3の垂下片3b下端部を納めて成ることを特

【0015】このような床パネル固定構造では、ビス頭2aのR形状に沿って、キャップ体3の垂下片3b下端部がスムーズに移動し、この垂下片3b下端部は段部2bに位置決めされる結果、キャップ体3の嵌め込み深さが一定になり、床パネル1表面を平面に仕上げやすくなっている。

【0017】図1はこの実施の形態の床パネル固定構造を示す断面図であり、図2は同床パネル固定構造に用いられるビス頭を示す斜視図であり、図3は同床パネル固定構造に用いられるキャップ体3を示し、(A)に全体を斜視図として、(B)に全体を断面図として、(C)に要部を拡大断面図として示している。

【0019】図1に示すように、この床パネル固定構造は、木質材などで形成される床パネル1表面に小穴1aを穿設し、この小穴1aからビス2を打ち込んで前記床パネル1を床下地に貼着固定し、このキャップ体3を前記小穴1aに嵌め込んで形成されている。そして、この床パネルの固定構造においては、キャップ体3の垂下片3b下端部に外方に突出するくさび片3cを形成し、この垂下片3b下端部をビス頭2aと小穴1a側壁との間に押し込むとともに、くさび片3cを小穴1a側壁に食い込ませている。

【0021】このような床パネル固定構造では、キャップ体3を小穴1aに嵌め込むことによって、キャップ体3における垂下片3b下端部が、ビス頭2aと小穴1a側壁との間に押し込まれて、くさび片3cが小穴1a側壁に食い込むことになって、キャップ体3が小穴1a内にしっかりと固定されている。つまり、キャップ体3の垂下片3bが接着剤等を用いることなく、小穴1a側壁に固定されるので、施工容易であるとともに、キャップ体3の抜けや落ち込みなどの不具合が発生しにくくなっているものである。また、ビス頭2aに接着剤が付着することがないので、床パネル1の取り替えなどのメンテナンスも行いやすいものになっているものである。

また、垂下片3b下端部には外方や上向きに突出したくさび片3cが形成されるときともに、この垂下片3b下端部は内方にやや膨出した膨らみ部も有している。そして、この垂下片3b下端部の下面の全体形状は、下方に凸の滑らかなR形状に形成されているのである。

【0025】なお、図4に示すように、ビス2としては、ビス頭2a外周縁に段部2bを有さず、ビス頭2a全体を滑らかなR形状に形成するものであってもよい。この場合、ビス頭2aの外周縁より立ち上がる面は、垂直に近いほうが好ましく、この立ち上がる面と小穴1a側壁との間隔は、キャップ体3の垂下片3b下端部が押し込まれて、くさび片3cが小穴1a側壁に食い込むようにする必要がある。

【発明の効果】請求項 1 記載の発明では、キャップ体を小穴に嵌め込むことによって、キャップ体における垂下片下端部が、ビス頭と小穴側壁との間に押し込まれる。この結果、垂下片下端部に形成されたくさび片が小穴側壁に食い込んで、キャップ体が小穴内にしっかりと固定される。

【0028】つまり、キャップ体の垂下片が接着剤等を用いることなく、小穴側壁に固定されるので、施工容易であるとともに、キャップ体の抜けや落ち込みなどの不具合が発生しにくくなっている。また、ビス頭に接着剤が付着することがないので、床パネルの取り替えなどのメンテナンスも行いやすいものになっている。



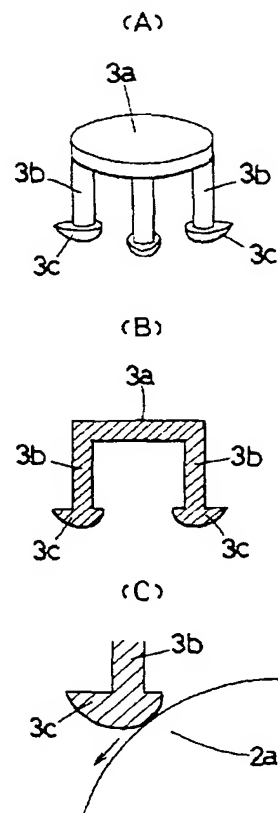


【図面の簡単な説明】

【符号の説明】

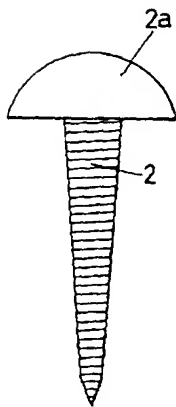
- 1 床パネル  
1a 小穴  
2 ビス  
2a ビス頭  
2b 段部  
3 キャップ体  
3a 表面板  
3b 垂下片  
3c くさび片

【图3】

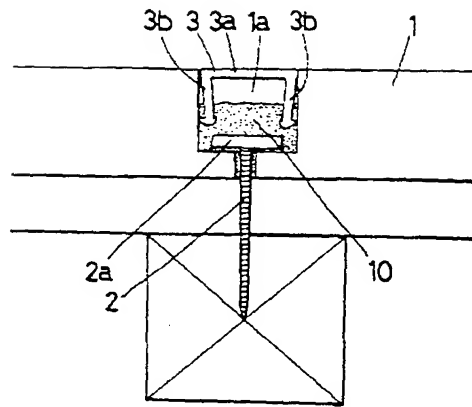




【図4】



【図5】





the piece of sag 3b soffit section of the cap field 3 moves smoothly, and is pushed in between screw head 2a and a pinhole 1a side attachment wall.

[0010] It constitutes as a characteristic feature that invention of claim 3 publication forms \*\*\*\* 2b in a screw head 2a periphery edge, dedicates the piece of sag 3b soffit section of the cap field 3, and changes in this \*\*\*\* 2b in invention given in either of the claims 1 or 2.

[0011] With such floor panel fixed structure, since the piece of sag 3b soffit section of the cap field 3 is positioned by \*\*\*\* 2b, the insertion depth of the cap field 3 becomes fixed, and it is easy to finish floor panel 1 front face at a flat surface.

[0012] It constitutes as a characteristic feature that invention of claim 4 publication forms caudad the inferior surface of tongue of the piece of sag 3b soffit section in the cap field 3 in R configuration of a convex, and changes in invention of claim 2 publication.

[0013] With such floor panel fixed structure, there is no connection in the piece of sag 3b soffit section, and it is easy to move in accordance with R configuration of screw head 2a.

[0014] It constitutes as a characteristic feature that invention of claim 5 publication forms \*\*\*\* 2b in a screw head 2a periphery edge, forms caudad the inferior surface of tongue of the piece of sag 3b soffit section in the cap field 3 in R configuration of a convex in invention of a publication of the claim 2 or 4 publications either, dedicates the piece of sag 3b soffit section of the cap field 3, and changes in the aforementioned \*\*\*\* 2b.

[0015] With such floor panel fixed structure, in accordance with R configuration of screw head 2a, the piece of sag 3b soffit section of the cap field 3 moves smoothly, the insertion depth of the cap field 3 becomes fixed, and this piece of sag 3b soffit section is easy to finish floor panel 1 front face at a flat surface, as a result of being positioned by \*\*\*\* 2b.

[0016]

[Gestalt of implementation of invention] The gestalt of 1 enforcement of this invention is explained below with reference to drawing 1 or drawing 3.

[0017] The cap field 3 with which drawing 1 is the cross section showing the floor panel fixed structure of the gestalt of this enforcement, drawing 2 is the perspective diagram showing the screw head used for this floor panel fixed structure, and drawing 3 is used for this floor panel fixed structure is shown, and it is (A). It is (B), using the whole as a perspective diagram. It is (C), using the whole as a cross section. The important section is shown as an expanded sectional view.

[0018] Moreover, drawing 4 is the perspective diagram showing the example from which the screw head used for floor panel fixed structure same as the above is different.

[0019] As shown in drawing 1, this floor panel fixed structure \*\*\*\*s pinhole 1a on floor panel 1 front face formed by woody material etc., drives in a screw 2 from this pinhole 1a, \*\*-arrival-fixes the aforementioned floor panel 1 to the under floor ground. does not insert this cap field 3 in the aforementioned pinhole 1a, and is formed. And while piece of wedge 3c which projects in the method of outside at the piece of sag 3b soffit section of the cap field 3 is formed and this piece of sag 3b soffit section is pushed in between screw head 2a and a pinhole 1a side attachment wall, piece of wedge 3c is made to eat into a pinhole 1a side attachment wall in the fixed structure of this floor panel.

[0020] \*\* arrival of the floor panel 1 is carried out on the \*\*\*\* plywood 5 prepared on the joist 4, and the screw 2 which fixes this floor panel 1 is driven into the depth which reaches a joist 4.

[0021] With such floor panel fixed structure, by inserting the cap field 3 in pinhole 1a, the piece of sag 3b soffit section in the cap field 3 will be pushed in between screw head 2a and a pinhole 1a side attachment wall, piece of wedge 3c will eat into a pinhole 1a side attachment wall, and the cap field 3 is being firmly fixed in pinhole 1a. that is, -- since it is fixed to a pinhole 1a side attachment wall, without piece of sag 3b of the cap field 3 using adhesives etc. -- construction -- while it is easy, it is hard coming to generate faults, such as an omission of the cap field 3, and depression Moreover, since adhesives do not adhere to screw head 2a, it is easy to perform a maintenance of exchange of the floor panel 1 etc.

[0022] As shown in drawing 2, screw head 2a of the screw 2 used for this floor panel fixed structure is formed in smooth R configuration of an upper part convex, and \*\*\*\* 2b which dedicates the piece of sag 3b soffit section of the cap field 3 to this screw head 2a periphery edge is formed.

[0023] As shown in drawing 3, resin mold goods etc. are used and the cap field 3 has faceplate 3a



\* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

DETAILED DESCRIPTION

---

[Detailed description]

[0001]

[The technical field to which invention belongs] this invention relates to the floor panel fixed structure which hides the screw head and is formed by inserting the cap field in the aforementioned pinhole while it drives in a screw from the pinhole \*\*\*\*ed by the floor panel front face in detail about floor panel fixed structure and fixes this floor panel.

[0002]

[Prior art] Conventionally, the floor panel fixed structure which is shown in drawing 5 is used. With this floor panel fixed structure, pinhole 1a is \*\*\*\*ed on floor panel 1 front face, a screw 2 is driven in from this pinhole 1a, and the floor panel 1 is \*\*-arrival-fixed to the under floor ground. Moreover, the cap field 3 which prepares piece of sag 3b in the periphery edge of faceplate 3a, and is formed in it is inserted in pinhole 1a, screw head 2a is hidden, and floor panel 1 fixed front face is finished.

[0003] Moreover, after driving in a screw 2 in this case, adhesives 10 are put in in pinhole 1a, adhesion fixation of the piece of sag 3b in the cap field 3 is carried out into pinhole 1a, and depression and the omission of the cap field 3 are prevented.

[0004]

[Object of the Invention] However, if it was in the above-mentioned conventional example, the work which puts in adhesives 10 in pinhole 1a took time, it was troublesome, and since adhesives 10 had adhered to screw head 2a when it was necessary to exchange the floor panel 1, there was a problem referred to as being hard to remove a screw 2.

[0005] this invention is made in order to solve the above troubles -- having -- the purpose -- faults. such as an omission of the cap field, and depression, -- generating -- hard -- moreover, adhesives -- being unnecessary -- construction -- it is easy and is in offer of floor panel fixed structure which is easy to perform a maintenance of exchange of a floor panel etc.

[0006]

[The means for solving a technical problem] Invention of the claim 1 publication which solves the above-mentioned technical problem \*\*\*\*s pinhole 1a on floor panel 1 front face. Drive in a screw 2 from this pinhole 1a, and the aforementioned floor panel 1 is \*\*-arrival-fixed to the under floor ground. In the fixed structure of the floor panel which is crowded and changes where prepare piece of sag 3b in the periphery edge of faceplate 3a, form the cap field 3, and this cap field 3 is not inserted in the aforementioned pinhole 1a While piece of wedge 3c which projects in the method of outside is formed in the piece of sag 3b soffit section of the cap field 3 and this piece of sag 3b soffit section is pushed in between screw head 2a and a pinhole 1a side attachment wall, it constitutes making piece of wedge 3c eat into a pinhole 1a side attachment wall, and changing as a characteristic feature.

[0007] With such floor panel fixed structure, by inserting the cap field 3 in pinhole 1a. the piece of sag 3b soffit section in the cap field 3 is pushed in between screw head 2a and a pinhole 1a side attachment wall. and piece of wedge 3c is eating into the pinhole 1a side attachment wall. Therefore, the cap field 3 is being firmly fixed in pinhole 1a.

[0008] It constitutes as a characteristic feature that invention of claim 2 publication forms screw head 2a in R configuration of an upper part convex, and changes in invention of claim 1 publication.

[0009] With such floor panel fixed structure, in accordance with R configuration of screw head 2a,





---

[Translation done.]



which has the color tone which suits the appearance of the front face of the floor panel 1, makes the periphery edge of this faceplate 3a carry out the sag of two or more pin-like piece of sag 3b, and is formed in it. moreover -- the piece of sag 3b soffit section -- outside \*\* -- while piece of vegetation preparations rust 3c was formed a little upward, the swelling of this piece of sag 3b soffit section was carried out a little to the inner direction -- it swells and also has the section And the whole inferior-surface-of-tongue configuration of this piece of sag 3b soffit section is caudad formed in smooth R configuration of a convex.

[0024] With this floor panel fixed structure constituted as mentioned above, while screw head 2a is covered by inserting the cap field 3 in pinhole 1a, floor panel 1 front face is formed in a flat. And since the piece of sag 3b soffit section of this cap field 3 is smooth R configuration in the process in which the cap field 3 is inserted in pinhole 1a, it is (C) of drawing 3. In accordance with R configuration of screw head 2a, it moves smoothly so that it may be shown. And while entering into \*\*\*\* 2b, as a result of being pushed in between screw head 2a and a pinhole 1a side attachment wall, piece of wedge 3c sinks into a pinhole 1a side attachment wall, and this cap field 3 is firmly fixed in pinhole 1a. Moreover, since the piece of sag 3b soffit section of the cap field 3 is positioned by \*\*\*\* 2b, the insertion depth of the cap field 3 becomes fixed, and it is easy to finish floor panel 1 front face at a flat surface in the fraction of this cap field 3. That is, while work of insertion fixation of the cap field 3 is made smoothly and certainly, it is easy to finish floor panel 1 front face at a flat surface.

[0025] In addition, as shown in drawing 4, as a screw 2, it does not have \*\*\*\* 2b on the screw head 2a periphery edge, but the whole screw head 2a may be formed in smooth R configuration. In this case, the field which starts from the periphery edge of screw head 2a has the perpendicularly nearer desirable one, the piece of sag 3b soffit section of the cap field 3 is pushed in, and, as for the spacing of this field and pinhole 1a side attachment wall that start, piece of wedge 3c needs to be made to eat into a pinhole 1a side attachment wall.

[0026] Moreover, in the above-mentioned floor panel fixed structure, although the remarkable effect of a work easy grade is done so at the point of not using adhesives, about a case, adhesives may be put in in pinhole 1a and the cap field 3 may be fixed more firmly. That is, the effect by interlocking of piece of wedge 3c and the effect by adhesives are put together, and the cap field 3 is fixed more powerfully.

[0027]

[Effect of the invention] In invention of claim 1 publication, the piece soffit section of a sag in the cap field is pushed in between the screw head and a pinhole side attachment wall by inserting the cap field in a pinhole. Consequently, the piece of the rust eats into a pinhole side attachment wall please form in the piece soffit section of a sag, and the cap field is firmly fixed in a pinhole.

[0028] that is, -- since it is fixed to a pinhole side attachment wall, without the piece of a sag of the cap field using adhesives etc. -- construction -- while it is easy, it is hard coming to generate faults, such as an omission of the cap field, and depression Moreover, since adhesives do not adhere to the screw head, it is easy to perform a maintenance of exchange of a floor panel etc.

[0029] In invention of claim 2 publication, since the piece soffit section of a sag of the cap field moves smoothly and is pushed in between the screw head and a pinhole side attachment wall in accordance with R configuration of the screw head, work of insertion fixation in the pinhole of the cap field is being made smoothly and certainly.

[0030] In invention of claim 3 publication, since the piece soffit section of a sag of the cap field is positioned by \*\*\*\*, the insertion depth of the cap field becomes fixed and is tending to finish a floor panel front face at a flat surface.

[0031] In invention of claim 4 publication, there is no connection in the piece soffit section of a sag, and in accordance with R configuration of the screw head, it is easy to move, and has become, and work of insertion fixation of the cap field is being made smoothly and certainly.

[0032] In invention of claim 5 publication, in accordance with R configuration of the screw head, the piece soffit section of a sag of the cap field moves smoothly, the insertion depth of the cap field becomes fixed and this piece soffit section of a sag is easy to finish a floor panel front face at a flat surface, as a result of being positioned by \*\*\*\*. That is, while work of insertion fixation of the cap field is made smoothly and certainly, it is easy to finish a floor panel front face at a flat surface.

